MENTAL HEALTH SURVEY IN A RURAL AREA

A preliminary report*

By W. MAYER-GROSS, M.D., M.R.C.P.

Crichton Royal, Dumfries

THE present report is based on a survey which aimed at ascertaining the mentally abnormal persons in the population of a rural area. One can think of many other ways of assessing the mental health of a sample population, for instance, by describing progress in industry, housing, education, working conditions, community life, etc. This was and is the procedure of the social surveys initiated in this country by pioneers of progress such as Charles Booth and Seebohm Rowntree. Their work sprang from concern about slums and poverty in large industrial centres. Dr. Caradog-Jones, in his Merseyside Survey, and others, gave these social studies a scientific foundation. His work contains chapters on epileptics and other chronic invalids; but abnormals—one would think—can only be of secondary interest in an inquiry dealing with the life of the average population.

As a kind of forerunner of the social surveys of our days, the *Statistical Account of Scotland* has to be mentioned. Its last edition was published in 1841. It was drawn up by the ministers of the Church, each recording the life of his parish. Industries, commerce and trade, prices and wages, amenities and important events are carefully reported and sundry other noteworthy facts. Among them was the number of "fools," "insane," "fatuous persons" and idiots for which the parish had to provide.

This was probably the first survey of the prevalence of mental cases in this country, certainly the last based on intimate knowledge of the population. Later statistics, here and in most other countries, relied on the mental hospital admission rate, a figure dependent on public prejudice, legal procedure, the number of available beds, enlightenment of doctors, etc. Moreover, the less severe cases of mental abnormality living within the community are, from the point of view of mental health, much more important than those within hospitals.

During the last thirty years the interest of psychiatrists has shifted from the major psychoses, statistically relatively rare occurrences, to the milder and borderline cases, the minor deviations from the normal average. Their dependence on social conditions and their influence on the social life of the patient himself, of his family and of the community, have been studied. This has led to some measure of understanding of the human aspect of certain social problems which in any material study of social life is so difficult to assess. Thus, psychiatry, one of the youngest branches of medicine, has for many years taken a greater interest in the social side of its subject than many older medical specialities.

It is, therefore, not by chance that psychiatrists believe themselves able to assess the mental qualities of sample populations, using their clinical experience and nomenclature. But it is not claimed that psychiatric surveys can be compared with the broad and comprehensive social surveys previously mentioned. The psychiatrist looks at the complex fabric of social life from one angle only. The facts he tries to assess are more subjective, less tangible and less definite. While he considers them essential and close to the roots of social conditions—good or evil—others may think of them as casual and unimportant.

The evils of urbanisation were mentioned as inspiring the large-scale surveys in townships. Psychiatric surveys have, with a few notable exceptions, been carried out in

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country districts. This is not because of any greater urgency, or because a larger number of abnormals was suspected, but because rural populations are, as a rule, more static, people are better known to one another and especially to persons in authority and to other key persons, so that fuller information should be available. Islands with certain traditions and characteristics of language, like Bornholm in the Baltic Sea, used by E. Strömgren, are especially suitable for a census of abnormals.

The area of our own survey can be regarded as a natural unit, bounded by very sparsely populated hills and moors to the North and East, by the sea and a national boundary to the South. The country adjoining the West is much poorer farm land and less densely populated. More than 30 per cent of the male population was in 1931 engaged in agriculture, by far the largest number in one occupation. There are several small centres of industry, quarrying, stone-cutting, textile industry, food manufacture and coal-mining on the northernmost edge of the county. The main town of the county and certain parishes of suburban character were excluded from the survey. It can be maintained that the area represents a fair sample of many rural districts in England and Scotland.

Besides the relatively easy access to personal information, the homogeneity and the representative character of the area, there are other reasons for studying the mental health of rural populations in this county. The population of our area appeared to be relatively stable because the number of inhabitants, about 56,000, has hardly changed since the beginning of the century. This impression, however, was misleading. According to the Registrar-General of Scotland's estimate, not less than 14,000, that is, one-quarter of the present inhabitants, have migrated from the district since 1901. If the district is taken together with the group of counties in the Scottish Lowlands to which it belongs, this larger area lost more than half of its mean population by migration in the sixty years before 1931. The excess of births over deaths has just counterbalanced the net loss by migration, hence the stationary figure of inhabitants. The migration is the district's contribution to the general exodus from the land setting in " on a national scale about 1880 as a result of the import of American foodstuffs " (G. M. Trevelyan). Trevelyan adds: " The later Victorians looked on with indifference at this tremendous social disaster as a natural and therefore acceptable outcome of Free Trade, and did nothing to check it at all."

The first inference of the migration figure on our survey must be that it can hardly serve as a basis for working out the incidence, in an average population, of certain types of mental illness presumed to be hereditary in nature; nor can it be used to calculate the expectancy of becoming a victim of this or that mental affliction: too many subjects have probably left the district before reaching the age of susceptibility. Others whose mental abnormality existed from birth or started in an early age will probably have stayed behind. In short, we are dealing with a " residual population," and this has to be kept in mind if the results are compared with those of similar surveys in other countries.

While, thus, the value of our findings for genetic research seems questionable, their interest from the social and economic point of view is increased. The survey was undertaken at a time when, under the pressure of war, the slump in farming, prolonged for 60 years, came to what then appeared a temporary end. A similar temporary improvement occurred during the first World War. This time, however, for reasons which do not require explanation, the vital necessity of a prosperous home agriculture in peace-time has been realised by the authorities. An economic depression lasting for decades is to be reversed by assured prices for agricultural produce, by re-equipment and reconstruction in housing, in communications and in many other fields. It is obviously of great importance to know something about the people who are to manage and carry forward this process of material recovery, not only as to their numbers, but also as to their human qualities.

Before discussing the method and some results a second finding of vital statistics is to be considered: the change in age distribution while the exodus from the land was in progress. There were, according to the Registrar-General, in the group of lowland counties, of which our district forms a part, 7,000 more persons living over the age of 65 in 1931, and 45,000 less under 20, than 60 years' earlier. This change in age structure and its social and economic implications he regards as alarming when the future prosperity of the area is being considered. It is far more serious than in the neighbouring urban and industrial regions. " It is evident that a community consisting of a disproportionate preponderance of old people is one that cannot hope to share in any industrial revival of the country " (Kyd, 1946).

The last sentence does not only refer to agriculture, but also to the small industries demanded by many economists as an important supplement in rural districts. It also applies to the important rôle of the countryside as the place of recruitment for workers, managers and members of the professional classes who during the last hundred years have increased the population of the industrial towns. A steady flow, not only of numbers, but also of fresh blood, intelligence, enterprise, went from the open country into the cities. This has continued in face of a fall of the birth-rate to about one-half what it was in 1871. Rural populations have been and probably always will be an important source of renewal of town populations. If this source deteriorates or dries up it must have important consequences for our general industrial efficiency. This lends further interest to the study of the health, and especially the mental health, of rural populations.

Method of the Survey

The procedure in the Scottish investigation was modelled on that of Strömgren in his survey of the Danish island of Bornholm. He lived in the district as a doctor of the local hospital and got in touch with the key persons of the island. He searched the records of hospitals and almshouses for patients belonging to the area.

The records of the local mental hospital, where most patients from the area have been treated for the last 100 years, provided a nucleus of cases from which our own survey was started. The social worker began her investigation by enquiring about patients discharged during the last ten years and about the relatives of those still in hospital. Thanks to the collaboration of the County Medical Officer of Health contact was made with the Local Government Officers who are also Public Assistance Officers and Sanitary Inspectors, and with the former, now superseded, Inspectors of the Poor. The interest of the county's Director of Education assured access to teachers and schools; equally valuable was the use we could make of the results of an intelligence test given to all school-children at the age of eleven. This test, introduced in 1937, is the Moray House Test, standardised for Scottish children. As a rule we considered as suitable for inclusion in the survey the children who scored less than an I.Q. of 80, but in all cases the present or former teacher was consulted as well as other informants.

The moral support given to the enquiry by the Board of Control was helpful in gaining the co-operation of district nurses, welfare officers, N.S.P.C.C. officers, and other officials or semi-officials. Ministers of the Churches could be interested and so were certain private persons known to have extensive knowledge of the population.

The value of information gathered from these different sources naturally varied a great deal from person to person and from parish to parish. Assessing the judgment and reliability of the witnesses was one of the foremost tasks of the worker in the field, as well as confirming the facts on which his or her information was based; contradictory views had to be weighed before reaching a decision. Many preliminary diagnoses had to be corrected in the light of new information coming, for instance, from a neighbouring district; and judgment on cases with too scanty information had to be suspended.

Strömgren, mainly interested in the major psychoses among the population of 46,000 of his island, visited and examined most of

his cases personally. In a district of Baltimore, on the other hand, where the John Hopkins School of Hygiene carried out an urban survey, most of the evidence was based on social workers' reports, or on other circumstantial evidence. Only a restricted number of cases were seen by the psychiatrist. There is no doubt that examination by a psychiatrist would be the most desirable supplement and the most reliable check of indirect information. Nothing of this kind has been attempted in our district, mainly because it would have meant in most cases an intrusion into the privacy, which might endanger the smooth working of the survey. The inclusion of the minor abnormalities in their different disguises in such visits would have made the work most unpopular. Even with the greatest tact and discretion it would have been very difficult to find a reason or pretext for such visits from a psychiatrist.

Examination of every person in a sample population arranged by the authorities seems the only way out. It would, however, have yielded much less reliable results because the unavoidable publicity would have led to deliberate withholding of cases and facts.

Some of the American workers, using similar indirect ways of enquiry, thought it necessary to mirror the variety of information obtainable in different cases in a great variety of diagnoses, some of them with very little medical or psychiatric meaning. To keep the scope of an investigation like this within its proper limits and to make its results comparable with similar work it is desirable to arrive in each case at a clearly defined diagnosis, or, if two or more diagnoses are needed, to consider one as primary. In a relatively small number, with well-established mental deviation, diagnosis was not possible and they were included under "undiagnosed." In an even smaller group abnormalities were suspected, but could not be established with sufficient certainty. They were listed as "suspected." Both groups together represent 6·3 per cent of the material.

This effort at fixing a diagnostic label, despite the vagueness and discrepancy of available information, may appear arbitrary and is, in fact, often only an approximation to what could result from a thorough examination and evaluation of the person included. But in the circumstances it seemed the best and most reliable method.

From the commonly used clinical diagnoses twenty-two applicable to an enquiry of this kind were selected. Some of them refer merely to symptoms which were expected to be easily recognised, such as stammer, chorea, enuresis; the majority are the generally used groupings of psychiatry based mainly on the psychological conduct of the patient. This also applies to the grading of the intellectually subnormals which form almost one-half of our diagnoses. As in a considerable proportion of our cases under fifteen an intelligence test had been carried out, one was on relatively safe ground here, that is, in 71 per cent of all cases in which the diagnosis of backwardness and mental deficiency was made.

The field of subnormality was enlarged towards the normal by including the *dull and backward* with an I.Q. between 80 and 70. This has, to our knowledge, not been attempted by other observers. In view of the preponderance of high-grade mental deficiency found in rural districts by E. O. Lewis, the inclusion of these cases seemed of special interest.

Results of the Survey

Turning to a summary of our findings (see table), we decided that 5,105 persons should be included as abnormals, being 9 per cent of the total population. Although in keeping with the idea of the "psychopathic tenth" of popular writers, the proportion is above the average of 7 per cent found in the comparable American survey of Williamson County in Tennessee. In certain parts of this large and prosperous county, however, which "have been subjected to special study," the rate of cases per hundred of population rose up to 12 per cent.

Examining the nine diagnostic subdivisions into which the original 22 diagnoses were telescoped for the purpose of tabulation we have no comparable results from other workers to check our large rate of *dull and*

backwards of 28·5 per thousand. One-third of the figure of 1,606 refers to children under 15, most of whom have been tested. The diagnosis of dullness among adults may be incorrect in some instances: but where it errs, it errs in favour of the subject, placing what is in fact a tolerably adapted high-grade defective among the dullards. The problem of adaptability of these cases under the present economic conditions will be discussed presently.

The rate of incidence of *mental deficiency*, 15·6 per 1,000, is high if compared with the mean figure of 10·49 found in 1927 by E. O. Lewis in three English rural districts. The difference is significant and far beyond expectation as a sampling error. Here, again, one-third belongs to our best ascertained group of under 15; correction of possible mistakes would rather tend to increase the figure than to reduce it.

Under the heading *neurotics and psychopaths* we have put together all milder non-intellectual deviations from normality, including maladjusted children as well as hysteria and other neuroses disguised as physical illness. The rate of 19 per 1,000 is very close to the findings in Tennessee, which was 20·7, and to a figure compiled from 15 investigations of small sample populations in Germany and Switzerland, which was 20·8.

The incidence of affective and schizophrenic psychoses has been studied by many observers in different countries. *Affective psychoses* show considerable variation of incidence. The high figure of 3·5 per 1,000 in our survey surpasses that of the Bornholm survey, which was conducted with much greater thoroughness. The difference is statistically significant. One-quarter of our cases suffered from involutional melancholia, an affliction supposed to be relatively frequent in Scotland. The proportion of *schizophrenia* is also high. It is only exceeded by the compiled figure from Germany and Switzerland, which may be due to different criteria of diagnosis. Schizophrenia in our area occurred in an almost identical frequency with urban and rural samples in Finland. The Finnish census was carried out in 1935-36 by eight psychiatrists, who personally saw every suspected case within populations numbering in all over 400,000.

With our method of case finding, *alcoholism* was relatively easy to ascertain, while the underlying abnormality of which it frequently is only a symptom often remained doubtful. The rate of 3·9 is similar to that found in Tennessee; the much higher mid-European figure being influenced by the habits of Bavaria, where many of the samples were collected.

The incidence of *epilepsy*, 1·7 per 1,000 of population, is definitely higher than that in Bornholm and in Finland (standard error of differences ±0·2). In Tennessee epileptics were not assessed under a separate diagnosis.

European surveys omitted the psychiatric conditions of *old age*, which, because of the increasing longevity of the population, are now of special interest. From the age distribution table of the Tennessee survey an approximate rate of 3 per 1,000 can be calculated, which is one-half only of our finding of 6 for the same group.

Summing up this bird's-eye view of the results of our enquiry it can be stated that, in spite of the relative superficiality of our case-finding method, the number of mental health problems of all kinds is high compared with the findings in similar work here and abroad. There was half as much mental deficiency disclosed as in rural England 20 years ago. All psychoses in which hereditary factors play a part, affective and schizophrenic psychoses and epilepsy were found to be more frequent than in rural districts abroad. On the other hand, afflictions possibly due to environmental stress, such as psychopathy and alcoholism, are as numerous as in the populations available for comparison.

Cases Below Age of Fifteen

For a more detailed analysis I propose to discuss the cases below the age of 15. Their number (see table) represents between one-fourth and one-fifth of the total and is just above 2 per cent of the total population, but more than 11 per cent of the school population. The latter figure and the other

rates calculated with reference to the number of school-children are slightly too high because of a small number of children below school age included in the material. Thanks to the help of the education authorities, and the teachers' co-operation, our information in this group is much more complete than in the rest of the material, the proportion of undiagnosed cases being much smaller. From the social point of view, the mental health of the children born in a country district is no doubt of great interest. They will have to carry through the programme of economic and social recovery initiated during the last few years while our investigation was in progress.

Columns 2 & 3 of the table show the telescoped diagnoses and their rate per 1,000 school-children.

Compared with the total material the rate of dullards is more than doubled, that of the mental defectives almost doubled. The absolute figures, founded on the teachers' estimates and, in children over 11, on test results as well, do not lend themselves to exaggeration. They form the biggest single item, over 70 per cent of the abnormal cases found among children. If imbeciles and idiots are omitted, 8·1 per cent of school population represents the subcultural group of defectives of Dr. Lewis, a figure which agrees well with the estimate of this group by the Ministry of Education.

One can think of three possible explanations for the higher proportion of dullards and defectives among the children if compared with the adults. The difference may either be an artefact due to the fuller information about the children from the educationists; or dullards and defectives may adapt themselves so well after leaving school that their abnormality cannot be detected; or, thirdly, the greater incidence in children may be a real one, perhaps connected with a general lowering of the nation's intelligence so much discussed recently.

To test the second theory, that of adaptability of the subnormals, we have made use of the next higher age group (15-24). In this group of 1,107 cases we found 816 dullards and defectives, a proportion very similar to that in the school-children. A considerable number had undergone the intelligence test and the test results were known. Ascertainment was, therefore, almost as complete as in the under-15s. What was their social position at the time of survey? Exactly two-thirds of the 816 subnormals were at the time of the survey either fully employed or working in the house as housewives. We have also data on the steadiness of work record, although less complete. However, only one-fifth of the subnormals between 15 and 24 were reported to have an unsteady work record, 29 being in need of institutional treatment.

The comparison of the two groups of dullards and defectives suggests that under the present conditions of labour shortage on the land subnormals can easily lead a useful life in the community. Their handicap will be little noticed after leaving school and probably forgotten in later life. This is certainly one important factor explaining the smaller figure of subnormality in the adult population.

Maladjusted children are often the precursors of neurosis and psychopathy and are listed under this heading. The number is in the same range as that of the total, but is twice the official estimate of the Minister of Education. Child guidance clinics have recently been opened in the district to deal with this problem. Among the maladjusted are included 20 cases with the secondary diagnosis of dullness. The group also includes 45 children with speech defect, stammer, etc. It is difficult to suggest help for their handicap except by a travelling speech therapist.

Among the *organic group* are 19 cases of chorea as primary or secondary diagnosis.

Five per cent of all the children have a chronic physical handicap, including deafness, blindness or other crippling afflictions, besides being mental problems.

Turning from the medical to the *social conditions* of these children and their families and homes, we find, as one would expect, that the majority come from the occupational group of semi-skilled and unskilled workers. There is a definitely greater number of farm workers and labourers among the parents of these children than among the adult cases.

As in so many formerly depressed rural districts, housing conditions of the labouring population are deplorably bad. No up-to-date record exists of the average number of persons per room. Many derelict dwellings at the time of the survey were still in use and had not been condemned. This explains why only 24 of our cases live in officially condemned houses. Thirty-nine per cent of the children in whom this could be assessed live in overcrowded houses, three and more persons to one room. In about one-third of those of whom we received information about the home conditions these were characterised as " bad," i.e. dirty or dilapidated or verminous or with insufficient furniture.

The 1,163 children in our group come from 831 families, i.e. 1·4 children per family; they are, therefore, not the offspring of limited numbers of parents, but are sprinkled throughout the population. Nevertheless a majority of 56 per cent have three brothers and sisters or more, and 33 per cent have more than five siblings. In 7 per cent of the material we have no information on this point. Fifty-seven per cent of the mothers are still in the childbearing age. The fertility of these subnormals and abnormals is certainly above the average of the population.

In 10 per cent the children or their siblings were neglected. In one-third of the cases there was a report of sexual immorality in the family, promiscuity or incest of parents. In over 600 cases the parents were included among the number of abnormals and in about 300 cases one or more brothers and sisters. On the other hand, the ratio of illegitimate children in the material (13 per cent) is not much above the ratio of the district calculated from the Registrar-General's data as being 11 per cent of births.

The character of the family life, as it appears to the outside world, could be estimated in 80 per cent of our child material. In over 50 per cent it was described as harmonious, and in only 14 per cent as disturbed by frequent quarrelling and violence, leading in some cases to disruption.

The relative contentment and absence of aggression in this group is also shown in the low figure of juvenile delinquents—55 cases only; an even smaller number of offenders was found in the next age group (15-24).

Another sign of the contented and inactive outlook in these families is the small number of siblings of our cases who have migrated from the county. We ascertained this figure in 94 per cent of the age group and found migration only 86 times (=7·4 per cent), a figure probably still too high because it may include in some instances the same migrating siblings more than once.

Summing up the findings in our youngest age group, it can be stated that subnormality is the main mental health problem among the children in this rural district, closely followed in importance by emotional maladjustment. Dull, defective and maladjusted children are to a large extent the offspring of families of the labouring population. The fertility of these families is above average; they often live under very unfavourable conditions, physical and moral, in overcrowded dwellings. On the whole, they seem to be happy and content and show little sign of resentment or protest against their life situation.

It would, however, be misleading to conclude this report, and especially the part dealing with children, in this sombre note of peaceful gloom.

It has to be remembered that our enquiry only surveyed the subnormals and abnormals, who, of course, only form a small minority. There is no reason to doubt the mental health of the great majority of the children.

Proposed Remedies

Turning to the remedies the psychiatrist can suggest for his disquieting findings, I would like to quote one more figure: 330, or one-third, of these abnormal children are in need of special schooling without receiving it. They now attend ordinary classes and their presence in smaller or larger numbers must necessarily cast a shadow on the teachers' work and on the education of the healthy. In some schools the dullards form a large minority, frustrating the school-

master's efforts. The fact that the subnormals do relatively well after leaving school in practical work on the land points the way to the education they need. First and foremost they should be taught the daily routine of a civilised life : how to wash and keep clean, how to dress and eat properly, how to make use of the appliances in the house, of the street, of leisure time, how to be helpful and honest and to live as members of a community—all things which a normal child of normal parents learns as a matter of course at home ; but which are not so easily picked up by the subnormal child and are often not practised in the families of subnormals. The educational emphasis has to be put on activities of a practical kind, which, however, does not mean on arts and crafts, but on the simple prerequisites of ordinary life in the country. Reading, writing and arithmetic should be secondary subjects and should not be pushed beyond the ability of the child.

A boarding school or home is needed for those maladjusted children whose home conditions are inadequate, as suggested in the Education Act, 1945. Preparations for such a home are on the way, but in a county without its own mental defective colony it is most important to prevent such a home from being flooded by defectives and dullards.

As to the adults, a policy is needed not only to stop the exodus of the active and intelligent, but to add to the " residual population " by attracting fresh incomers to the rural communities. Experts have fully discussed this problem and suggested solutions on paper ; since the end of the war some start has been made in our area with improved housing and afforestation on a larger scale, the latter attracting a desirable type of incomer. Speaking without expert knowledge in such matters, I venture to suggest that the scarcity of farms which are owned by the cultivator and can be developed as a family property, prevents the settling of young and progressive people ; equally, the absence of marketgardening and other intensive methods of cultivation doubtless reduces the prospects of the enterprising individualist so suitable to life on the land.

Light industries are needed giving those children of the worker who are unsuited for farming an opportunity of apprenticeship and of permanent work ; such industries would at the same time provide the seasonal labour without which certain types of farming cannot prosper.

The last word in all these changes must be with the economist and the politician. Some may find drastic changes unnecessary because the area is now a prosperous one, thanks to guaranteed prices, wages and subsidies. But it should be remembered that material prosperity alone cannot reverse the effect on human qualities of sixty years' depression and neglect.

It would, however, be unjust to deny certain signs of recovery and of the increasing consciousness noticeable in the human and social sphere. One of them was the widespread understanding and friendly support of this survey. I doubt if it could have been concluded so smoothly and successfully while the depression still lasted. If it could in a small way hasten the revival of country life at a turning point of rural history, the sad facts it has revealed will have been worth while collecting.

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RESULTS OF A MENTAL HEALTH SURVEY IN A RURAL AREA OF SCOTLAND

1 Diagnosis	2 in 10,141 school-children	3 per 1,000 school-children	4 in total population (56,231)	5 per 1,000 of population	6 E. O. Lewis 1927, rural	7 Bornholm, rural	8 Tennessee, rural	9 Germany and Switzerland, rural and urban	10 Finland, rural and urban
Dull and backward ...	599	59·1	1,606	28·5					
Mental Deficiency	279	27·1	878	15·6	10·49		8·2		
Neurosis and Psychopathy	217	21·4	1,091	19·4			20·7	20·8	
Affective Psychoses ...	—	—	199	3·5		2·7	1·7	2·3	0·3
Schizophrenia	1	—	236	4·2		3·3	1·7	7·7	4·3
Alcoholism ...	—	—	220	3·9			3·2	8·6	
Epilepsy ...	13	1·3	85	1·7		1·0		4·2	1·0
Senile-arteriosclerotic psychoses ...	—	—	339	6·0					
Other organic psychoses ...	16	1·6	126	2·2					
Undiagnosed...	11	1·1	174	3·0					
Suspected ...	27	2·7	151	2·7					
Total ...	1,163	114·3	5,105	90·7					

Findings in persons under 15 (columns 2 and 3), in the total population (columns 4 and 5) and in similar surveys for comparison (columns 6-10)